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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------------|------------------|
| 10/720,791 | 11/24/2003 | Tadashi Yano | 10407-71US (A3085MT-US1) | 5705 |
| 570 | 7590 | 12/28/2004 | EXAMINER | |
| AKIN GUMP STRAUSS HAUER & FELD L.L.P. ONE COMMERCE SQUARE 2005 MARKET STREET, SUITE 2200 PHILADELPHIA, PA 19103-7013 | | | DINH, TRINH VO | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2821 | |

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/720,791

Applicant(s)

YANO ET AL.

Examiner

Trinh Vo Dinh

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5 and 7-15 is/are rejected.
- 7) ☒ Claim(s) 2-3,6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>11/24/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 11 objected to because of the following informalities:

Claim 11 should depend on claim 10 instead of claim 7 since claim 11 recites a limitation "another resin" while there is not any resin recited in the base claim and any intervening claims 7 and 1. Correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 7-13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Komoto et al (USP 6,340,824).

With respect to claim 1, Komoto discloses an LED lamp (100A, 200A...) comprising at least one LED chip (10,50...) having an emission peak wavelength of 400 nm to 490 nm (col. 15, lines 28-48) and a wavelength converting portion (abstract) including a phosphor for transforming the emission of the LED chip into light having a longer wavelength than that of the emission (col. 15, lines 28-33), wherein the LED lamp further includes filtering means (element 544, Figs. 10C, 23A, 60, 72, 84, etc.; or element 692, Figs. 13B, 25, 34A-C, 62, 74,

Art Unit: 2821

86...), of which the filtering spectral transmittance is adjusted so as to minimize color amount of current supplied to the LED chip to make the LED chip produce the means, of which the shifting even if the emission has changed.

With respect to claim 7-8, Komoto discloses the LED chip (10, 50) being mounted on a substrate or flip-chip bonded to the substrate (col. 17, line 20-col. 18, line 26),

With respect to claims 9-11, Komoto discloses the wavelength converting portion (element AB in Figs. 110, 117) being made of a resin (col. 50, lines 40-54), and further being covered with another resin (Figs. 103-123), and being a cylindrical shape and covers the LED chip entirely (Figs. 103-113....).

With respect to claims 12-13, Komoto discloses the filtering means (544, 692) being arranged so as to cover the wavelength converting portion (Figs. Figs. 10C, 23A, 60, 72, 84, or Figs. 13B, 25, 34A-C...), and being made of a resin (col. 49, lines 38-44).

With respect to claim 15, the LED lamp has a card shape (Fig. 10A) so as to be attachable to, or removable from, an illumination unit inherently including a lighting circuit (an LED only operates when it is connected to an electrical or lighting circuit).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2821

5. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komoto in view of Mueller et al (USP 6,417,019 of record).

With respect to claim 4, Komoto discloses every feature of the claimed invention except the filtering means being designed to have the specifically spectral transmittance in wavelengths range of 400 nm to 545nm. Mueller discloses $\text{SrGa}_2\text{S}_4:\text{Eu}^{2+}$ being strongly absorb (reduce transmittance) in a range between 380nm and about 480nm (col. 3, lines 56-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to have specifically employed $\text{SrGa}_2\text{S}_4:\text{Eu}^{2+}$ as a material for Komoto's color filter in for LED in order to provide strong absorption cross section for a wavelength range of 400 nm to 545nm (ultraviolet wavelength) as taught in Mueller, col. 3, lines 56-67.

With respect to claim 5, similarly, employing $\text{SrGa}_2\text{S}_4:\text{Eu}^{2+}$ as a material for Komoto's color filter in a wavelength range (380nm-480nm), which is shorter than the emission peak wavelength (400nm-490nm) for reduce the spectral transmittance would have been obvious to one having skill in the art.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komoto.

With respect to claim 14, although Komoto does not suggest that the color filter material may be blended in same resin with the light-emitting phosphors, it would have been obvious to one of ordinary skill in the art at the time of the invention to have done so. First, Komoto discloses that multiple phosphors may be blended in the same resin (such as those for emitting K G and B). Second, Komoto discloses at least that the absorbing or reflecting materials may be formed within a resin layer. As such, it would have been obvious to incorporate the wavelength converting phosphors and the $\text{SrGa}_2\text{S}_4:\text{Eu}^{2+}$ within the same resin

Art Unit: 2821

for the purpose of reducing the number of required manufacturing steps and thereby reduce the associated costs, a well-known industry goal.

Allowed Subject Matters

7. Claims 2-3 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The cited art of record fails to teach the spectral transmittance of the filtering means corresponds to a wavelength dependence of an inverse changed rate, or in the wavelength range of 400 nm to 545 nm, the filtering means has a filtering ratio of 3% to 35%.

Inquiry

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821. The examiner can normally be reached on Monday to Friday from 9:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 2821

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art unit 2821

A handwritten signature in black ink, appearing to read 'Trinh Vo Dinh', with a long horizontal flourish extending to the right.

Trinh Vo Dinh
December 27, 2004